Abstract

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Title: The effect of kinesiotape application on rheological properties of the knee joint with chondromalacia patellae

Problem definition: Chondromalacia patellae is a very frequent diagnosis related to knee injuries. Diagnosing chondromalacia is very difficult. Knee arthroscopy is the best method for evaluating the cartilage condition, however this technique is invasive. Kinesiotaping is a therapeutic method extensively used to affect knee pain. Patellar taping is an effective method in improving symptoms resulting from patellofemoral joint problems, nevertheless the evaluation of its effect has not yet been objectively investigated.

Aim of the thesis: The aim of this study is firstly to discover the possibility to noninvasively detect chondromalacia patellae using the method of biorheometry and secondly to discover the impact of kinesiotaping on rheological properties of the knee joint with chondromalacia patellae.

Method: The designed experiment was performed as a pilot case study using the method of biorheometry. The history of the patient was monitored using a questionnaire and by a clinical examination of the knee joint. Two questionnaires were created to evaluate the functional state of the knee joint. Measurements were done on a special device called biorheometer. Totally five measurements were done – without tape without load, without tape under load, with tape without load, with tape under load and with tape after 4 days application. The evaluation was focused on results from the questionnaires and on rheological properties. An expert assessment of biorheograms was done also.

Results: Some special grafoelements where identified, which may detect chondromalacia patellae. It can be concluded that the rigidity and also the demands on motion (flexion, extension) increase by kinesiotape application on the knee joint.

Key words: chondromalacia, patella, patellofemoral joint, kinesiotaping, biorheometry,